

1      **What is claimed is:**

2      1. A stator for a D.C. brushless motor, comprising:

3              a bobbin including a winding wound therearound and a central hole;

4              a magnetically conductive tube made of a magnetically conductive material and  
5              extending through the central hole of the bobbin, the magnetically conductive tube including  
6              an upper side and a lower side;

7              at least one upper pole plate attached to the upper side of the magnetically conductive  
8              tube and including a plurality of poles and a central tubular portion through which the  
9              magnetically conductive tube extends; and

10              at least one lower pole plate attached to the lower side of the magnetically conductive  
11              tube and including a plurality of poles and a central tubular portion through which the  
12              magnetically conductive tube extends, the poles of said at least one upper pole plate and the  
13              poles of said at least one lower pole plate being alternately disposed.

14      2. The stator for a D.C. brushless motor as claimed in claim 1, wherein each said pole of said  
15              at least one upper pole plate and said at least one lower pole plate includes a longitudinal  
16              extension that extends in a direction parallel to a longitudinal direction of the bobbin, thereby  
17              defining a magnetic pole face.

18      3. The stator for a D.C. brushless motor as claimed in claim 1, wherein two said upper pole  
19              plates are attached to the upper side of the bobbin and two said lower pole plates are attached  
20              to the lower side of the bobbin, each of said upper pole plates and said lower pole plates  
21              including a central tubular portion through which the magnetically conductive tube extends.

22      4. The stator for a D.C. brushless motor as claimed in claim 3, wherein the central tubular  
23              portion of one of said upper pole plates extends into the central hole of the bobbin, the central  
24              tubular portion of one of said lower pole plates extending into the central hole of the bobbin.

25      5. The stator for a D.C. brushless motor as claimed in claim 4, wherein each said pole of one  
26              of said upper pole plates and said lower pole plates includes a longitudinal extension that

1 extends in a direction parallel to a longitudinal direction of the bobbin, thereby defining a  
2 magnetic face.

3 6. The stator for a D.C. brushless motor as claimed in claim 1, wherein two said upper pole  
4 plates are attached to the upper side of the bobbin and two said lower pole plates are attached  
5 to the lower side of the bobbin, an upper one of the two upper pole plates including a central  
6 tubular portion projecting from an upper side thereof and extending away from the bobbin, a  
7 lower one of the two upper pole plates including a central tubular portion projecting from an  
8 underside thereof and extending into the central hole of the bobbin, an upper one of the two  
9 lower pole plates including a tubular portion projecting from an upper side thereof and  
10 extending into the central hole of the bobbin, a lower one of the two lower pole plates  
11 including a tubular portion projecting from an underside thereof and extending away from the  
12 bobbin, the magnetically conductive tube being extending through the central tubular portions  
13 of the upper pole plates and the lower pole plates.

14 7. The stator for a D.C. brushless motor as claimed in claim 6, wherein each of the poles of the  
15 upper one of the upper pole plates includes a longitudinal extension extending along a  
16 longitudinal direction of the magnetically conductive tube and extending away from the lower  
17 pole plates, each of the poles of the lower one of the lower pole plates including a longitudinal  
18 extension extending along the longitudinal direction of the magnetically conductive tube and  
19 extending toward the lower pole plates.

20 8. The stator for a D.C. brushless motor as claimed in claim 6, further comprising at least one  
21 further upper pole plate sandwiched between the two upper pole plates, said at least one  
22 further upper pole plate including a central hole through which the magnetically conductive  
23 tube extends.

24 9. The stator for a D.C. brushless motor as claimed in claim 1, wherein the magnetically  
25 conductive tube includes a flange on an end thereof to prevent disengagement of said at least  
26 one upper pole plate and said at least one lower pole plate.

1       10. The stator for a D.C. brushless motor as claimed in claim 2, wherein the magnetically  
2       conductive tube includes a flange on an end thereof to prevent disengagement of said at least  
3       one upper pole plate and said at least one lower pole plate.

4       11. The stator for a D.C. brushless motor as claimed in claim 6, wherein the magnetically  
5       conductive tube includes a flange on an end thereof to prevent disengagement of said at least  
6       one upper pole plate and said at least one lower pole plate.

7       12. The stator for a D.C. brushless motor as claimed in claim 7, wherein the magnetically  
8       conductive tube includes a flange on an end thereof to prevent disengagement of said at least  
9       one upper pole plate and said at least one lower pole plate.

10      13. The stator for a D.C. brushless motor as claimed in claim 8, wherein the magnetically  
      conducting tube includes a flange on an end thereof to prevent disengagement of said at least  
      one upper pole plate and said at least one lower pole plate.

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